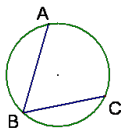
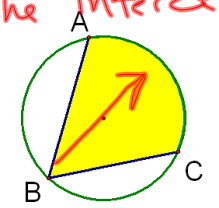
11.5 Inscribed Angles and Polygons

Inscribed angle-is an angle whose vertex is on a circle and whose sides contain chords of the circle.



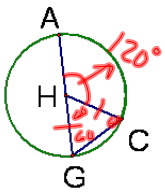
Intercepted arc-is the arc formed by the angle

$\overset{\frown}{CA}$ is the intercepted



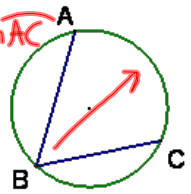
Find:
m∠AHC = 120
m∠AGC = 60

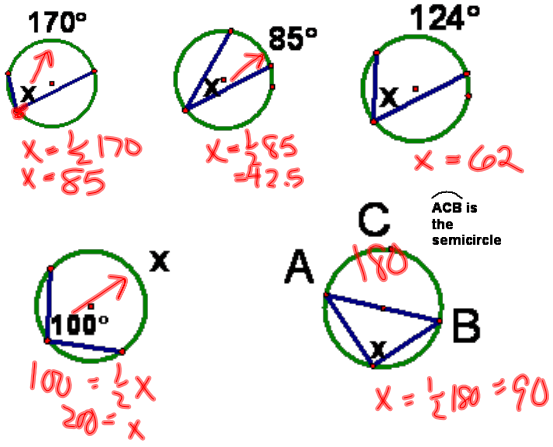
$\overset{\frown}{mAC} = 120°$



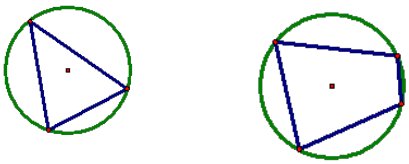
Theorem 11.7-If an angle is inscribed in a circle, then its measure is half of the measure of its intercepted arc.

$m\angle ABC = \frac{1}{2}\, mAC$

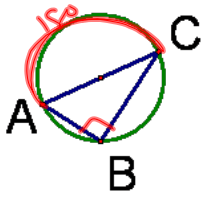


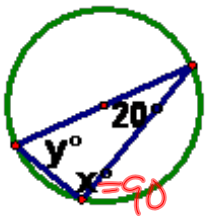


If all of the vertices of a polygon lie on a circle, then the polygon is **inscribed** in the circle, and the circle is **circumscribed** about the polygon.



Theorem 11.8-If a **right** triangle is inscribed in a circle, then the **hypotenuse** is the **diameter**.





90 + 20 = 110

180 − 110 = 70 = y

inscribed What type of angle is ∠I?

GHB What arc does ∠I intercept?

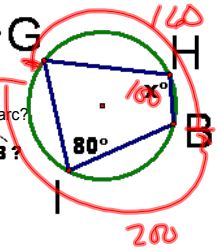
80 × 2 = 160 160 What it the measure of that arc?

200 What is the measure of GIB ?

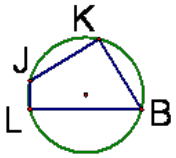
360 − 160 = 200

100 ½ 200 What is the measure ∠H?

supplementary What do you notice about ∠I and ∠H?

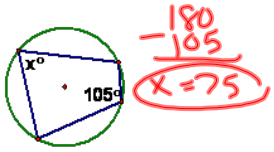


Theorem 11.9-If a quadrilateral is in scribed in a circle, then opposite angles are supplementary.

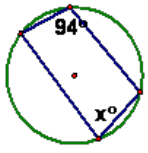


∠K + ∠L are supplementary

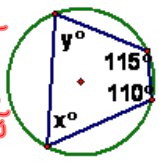
∠J + ∠B are supplementary



180 − 105 = x = 75



180 − 94 = 86

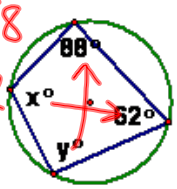


x = 180 − 115 = 65

y = 180 − 110 = 70

x = 118

y = 92



HW
p617-619
9-22, 28-30, 32, 33